What is claimed is:

1. A method of manufacturing a semiconductor device comprising:

connecting at least part of a path extending from a reaction chamber to a detoxification device through a vacuum pump by a flexible tube having a tube body made of hard material, the tube body having projected parts and depressed parts and a cover provided over an outer surface of the tube body, the cover being made of elastic material, the cover being in contact with around the projected parts of the tube body and formed over the depressed parts of the tube body so that a vacant space is formed between the tube body and the cover;

disposing a semiconductor substrate within the reaction chamber;

activating the vacuum pump to bring the reaction chamber into a pressure-reduced state;

supplying a reaction gas to the reaction chamber; and

causing the reaction gas to react to thereby deposit a reactant on the semiconductor substrate.

2. A method of manufacturing a semiconductor device according to claim 1, wherein a thickness of the tube body is about 1-2mm and a thickness of the cover is about 0.15-0.3mm.

3. A method of manufacturing a semiconductor device according to claim 1, wherein the cover is made of heat

shrinkable silicone rubber.

4. A method of manufacturing a semiconductor device according to claim 1, wherein the cover is made of electron beam bridging soft flame resistance polyolefin resin.

5. A method of manufacturing a semiconductor device according to claim 1, wherein the cover is shaped to be cylinder to have an inner surface which is in contact with the projected parts of the tube body but not with the depressed parts.

6. A method of manufacturing a semiconductor device according to claim 1, wherein the cover is formed by:

providing a cylindrical shape of the cover;

inserting the tube body into the cover; and heating the cover in order that the cover is shrink and be in contact with a part of the outer surface of the tube body.

7. A method of manufacturing a semiconductor device comprising:

connecting at least part of a path extending from a processing chamber to a detoxification device through a vacuum pump by a flexible tube having a tube body made of hard material, the tube body having projected parts and depressed parts and a cover provided over an outer surface of the tube body, the cover being made of elastic material, the cover being in contact with around the projected parts of the tube body and formed over the

depressed parts of the tube body so that a vacant space is formed between the tube body and the cover;

disposing a semiconductor substrate within the processing chamber;

activating the vacuum pump to bring the processing chamber into a pressure-reduced state;

supplying a processing gas to the processing chamber; and

causing the processing gas to react with a substance on the semiconductor substrate to thereby effect a process on the semiconductor substrate.

8. A method of manufacturing a semiconductor device according to claim 7, wherein the process effected on the semiconductor substrate is an etching process.

9. A method of manufacturing a semiconductor device according to claim 7, wherein the process effected on the semiconductor substrate is an ashing process.

10. A method of manufacturing a semiconductor device according to claim 7, wherein a thickness of the tube body is about 1-2mm and a thickness of the cover is about 0.15-0.3mm.

11. A method of manufacturing a semiconductor device according to claim 7, wherein the cover is made of heat shrinkable silicone rubber.

12. A method of manufacturing a semiconductor device according to claim 7, wherein the cover is made of electron beam bridging soft flame resistance polyolefin

resin.

13. A method of manufacturing a semiconductor device according to claim 7, wherein the cover is shaped to be cylinder to have an inner surface which is in contact with the projected parts of the tube body but not with the depressed parts.

14. A method of manufacturing a semiconductor device according to claim 7, wherein the cover is formed by:

providing a cylindrical shape of the cover;

inserting the tube body into the cover; and

heating the cover in order that the cover is shrink and be in contact with a part of the outer surface of the tube body.

15. A method of manufacturing a semiconductor device comprising:

connecting at least part of a path extending from a processing chamber provided with a target to a detoxification device through a vacuum pump by a flexible tube having a tube body made of hard material, the tube body having projected parts and depressed parts and a cover provided over an outer surface of the tube body, the cover being made of elastic material, the cover being in contact with around the projected parts of the tube body and formed over the depressed parts of the tube body so that a vacant space is formed between the tube body and the cover;

disposing a semiconductor substrate within the processing chamber;

activating the vacuum pump to bring the processing chamber into a pressure-reduced state;

supplying a sputtering gas to the processing chamber; and

causing ions of the sputtering gas to collide with the target to thereby deposit a material constituting the target on the semiconductor substrate.

16. A method of manufacturing a semiconductor device according to claim 15, wherein a thickness of the tube body is about 1-2mm and a thickness of the cover is about 0.15-0.3mm.

17. A method of manufacturing a semiconductor device according to claim 15, wherein the cover is made of heat shrinkable silicone rubber.

18. A method of manufacturing a semiconductor device according to claim 15, wherein the cover is made of electron beam bridging soft flame resistance polyolefin resin.

19. A method of manufacturing a semiconductor device according to claim 15, wherein the cover is shaped to be cylinder to have an inner surface which is in contact with the projected parts of the tube body but not with the depressed parts.

20. A method of manufacturing a semiconductor device according to claim 15, wherein the cover is formed

by:

providing a cylindrical shape of the cover;

inserting the tube body into the cover; and

heating the cover in order that the cover is shrink and be in contact with a part of the outer surface of the tube body.

21. A method of manufacturing a semiconductor device comprising:

connecting at least part of a path extending from a processing chamber to a detoxification device through a vacuum pump by a flexible tube having a tube body made of hard material, the tube body having projected parts and depressed parts and a cover provided over an outer surface of the tube body, the cover being made of elastic material, the cover being in contact with around the projected parts of the tube body and formed over the depressed parts of the tube body so that a vacant space is formed between the tube body and the cover;

introducing a purge gas into the processing chamber;

disposing a semiconductor substrate within the processing chamber;

activating the vacuum pump to bring the processing chamber into a pressure-reduced state; and

effecting a process on the semiconductor substrate under the pressure-reduced state.

22. A method of manufacturing a semiconductor

device according to claim 21, wherein the process effected on the semiconductor substrate is an ion-implanting process.

23. A method of manufacturing a semiconductor device according to claim 21, wherein the process effected on the semiconductor substrate is a bake process.

24. A method of manufacturing a semiconductor device according to claim 21, wherein a thickness of the tube body is about 1-2mm and a thickness of the cover is about 0.15-0.3mm.

25. A method of manufacturing a semiconductor device according to claim 21, wherein the cover is made of heat shrinkable silicone rubber.

26. A method of manufacturing a semiconductor device according to claim 21, wherein the cover is made of electron beam bridging soft flame resistance polyolefin resin.

27. A method of manufacturing a semiconductor device according to claim 21, wherein the cover is shaped to be cylinder to have an inner surface which is in contact with the projected parts of the tube body but not with the depressed parts.

28. A method of manufacturing a semiconductor device according to claim 21, wherein the cover is formed by:

providing a cylindrical shape of the cover;

inserting the tube body into the cover; and

heating the cover in order that the cover is shrink and be in contact with a part of the outer surface of the tube body.

29. A method of manufacturing a semiconductor device according to claim 21, wherein the semiconductor substrate is disposed before the processing chamber reaches the pressure-reduced state.

30. A method of manufacturing a semiconductor device according to claim 21, wherein the semiconductor substrate is disposed after the processing chamber has reached the pressure-reduced state.

31. A method of manufacturing a semiconductor device comprising:

connecting at least part of a path extending from a processing chamber placed adjacent to a beam generation source to a detoxification device through a first vacuum pump by a flexible tube having a tube body made of hard material, the tube body having projected parts and depressed parts and a cover provided over an outer surface of the tube body, the cover being made of elastic material, the cover being in contact with around the projected parts of the tube body and formed over the depressed parts of the tube body so that a vacant space is formed between the tube body and the cover;

introducing a purge gas into the processing chamber;

disposing a semiconductor substrate within the

processing chamber;

activating the first vacuum pump to bring the processing chamber into a pressure-reduced state; and

applying a beam from the beam generation source to the processing chamber under the pressure-reduced state to thereby effect a process on the semiconductor substrate.

32. A method of manufacturing a semiconductor device according to claim 31, wherein the beam generation source is brought to a pressure-reduced state by a second vacuum pump, and at least part of a path extending from the beam generation source to a detoxification device through the second vacuum pump is connected by the flexible tube.

33. A method of manufacturing a semiconductor device according to claim 31, wherein the beam is a laser beam, and the process effected on the semiconductor substrate is heat treatment.

34. A method of manufacturing a semiconductor device according to claim 31, wherein the beam is a laser beam, and the process effected on the semiconductor substrate is an impurity diffusing process.

35. A method of manufacturing a semiconductor device according to claim 31, wherein the beam is a beam emitted from a halogen lamp, and the process effected on the semiconductor substrate is a rapid thermal process.

36. A method of manufacturing a semiconductor

device according to claim 31, wherein the beam is a scanning electron beam, and the process effected on the semiconductor substrate is a SEM measuring process.

37. A method of manufacturing a semiconductor device according to claim 31, wherein the beam is X-rays, and the process effected on the semiconductor substrate is a fluorescent X-ray measuring process.

38. A method of manufacturing a semiconductor device according to claim 31, wherein the beam is an electron beam, and the process effected on the semiconductor substrate is an electron beam evaporating process.

39. A method of manufacturing a semiconductor device according to claim 31, wherein a thickness of the tube body is about 1-2mm and a thickness of the cover is about 0.15-0.3mm.

40. A method of manufacturing a semiconductor device according to claim 31, wherein the cover is made of heat shrinkable silicone rubber.

41. A method of manufacturing a semiconductor device according to claim 31, wherein the cover is made of electron beam bridging soft flame resistance polyolefin resin.

42. A method of manufacturing a semiconductor device according to claim 31, wherein the cover is shaped to be cylinder to have an inner surface which is in contact with the projected parts of the tube body but not

with the depressed parts.

43. A method of manufacturing a semiconductor device according to claim 31, wherein the cover is formed by:

providing a cylindrical shape of the cover;

inserting the tube body into the cover; and

heating the cover in order that the cover is shrink and be in contact with a part of the outer surface of the tube body.

44. A method of manufacturing a semiconductor device according to claim 31, wherein the semiconductor substrate is disposed before the processing chamber reaches the pressure-reduced state.

45. A method of manufacturing a semiconductor device according to claim 31, wherein the semiconductor substrate is disposed after the processing chamber has reached the pressure-reduced state.

46. A method of manufacturing a semiconductor device according to claim 31, wherein the semiconductor substrate is disposed before the processing chamber reaches the pressure-reduced state.

47. A method of manufacturing a semiconductor device according to claim 31, wherein the semiconductor substrate is disposed after the processing chamber has reached the pressure-reduced state.